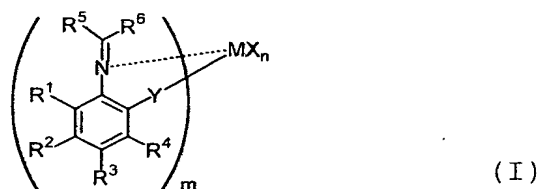


ABSTRACT

A process for polymerizing an olefin is capable of polymerizing an olefin with excellent polymerization activity, and comprises polymerizing or copolymerizing an olefin at a polymerization reaction temperature of 50 to 200 °C in the presence of a catalyst comprising a transition metal compound (A) represented by the following formula (I), a compound (B-1) having a reduction ability which reacts with the transition metal compound (A) to convert an imine structure moiety to a metal amide structure, and a compound (B-2) which reacts with the transition metal compound (A) to form an ion pair;



wherein M is a transition metal atom of Groups 3 to 11 of the periodic table; m is an integer of 1 to 6; Y is O, S, Se, or -C(R⁷)-; R¹ to R⁷ may be the same or different, and are each a hydrogen atom, a halogen atom, a hydrocarbon group, an oxygen-containing group, a nitrogen-containing group and the like; n is a number satisfying a valence of M; and X is a hydrogen atom, a halogen atom, a hydrocarbon group and the like.